May 20, 1958 R. H. SEER 2,834,990

INJECTION MOLD FOR MOLDING CLIPS

Filed May 24, 1955

Fig. 1

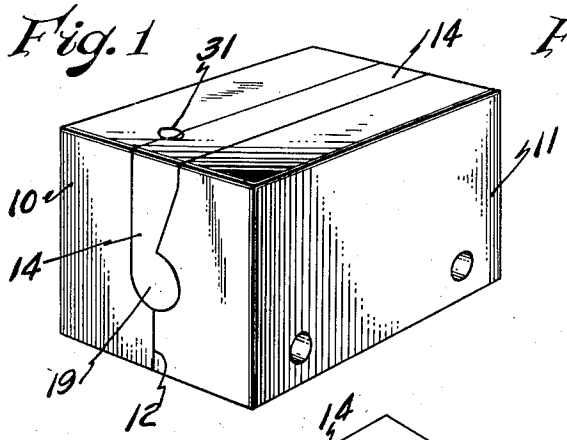



Fig. 2

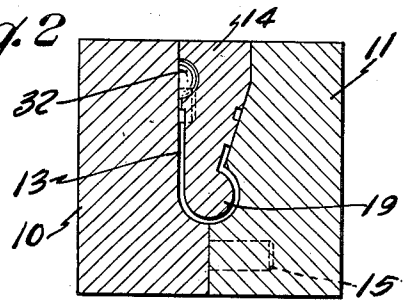



Fig. 3

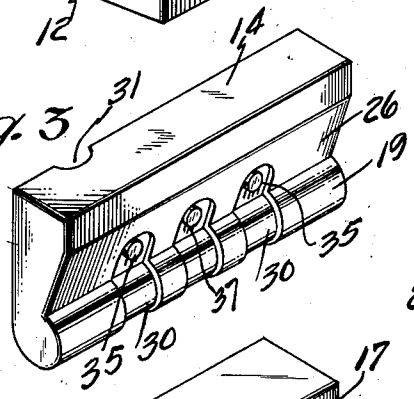
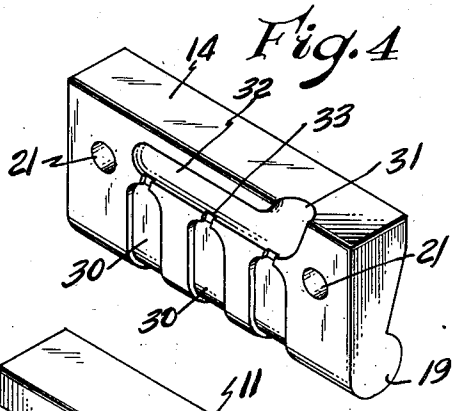



Fig. 4



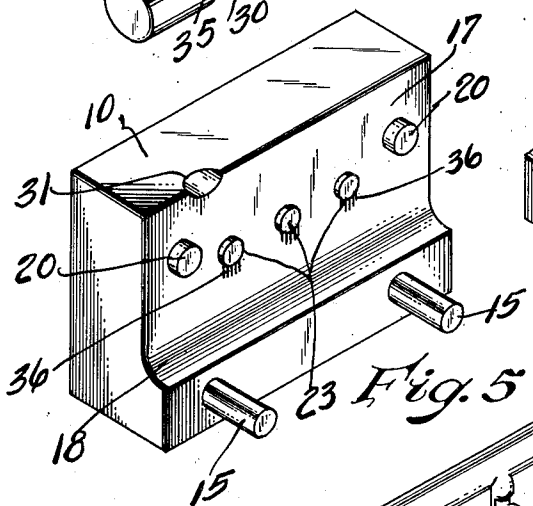




Fig. 5

Fig. 6

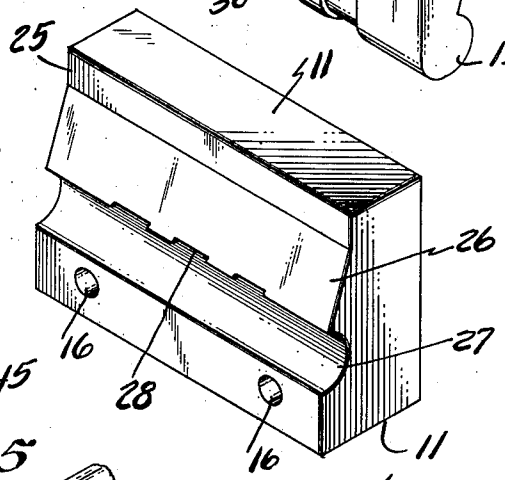
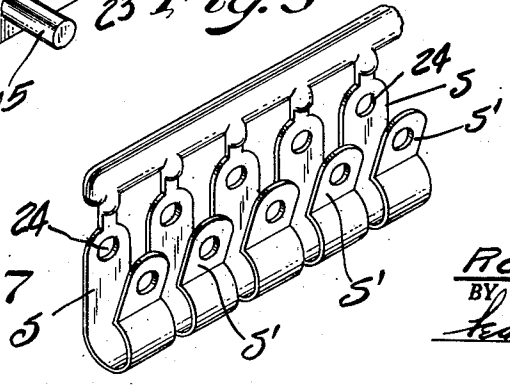



Fig. 7




INVENTOR.
Robert H. Seer
BY
Kearman & Kearman
ATTORNEYS

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# INJECTION MOLD FOR MOLDING CLIPS

Robert H. Seer, Midland, Mich.

Application May 24, 1955, Serial No. 510,672

2 Claims. (Cl. 18—42)

This invention relates to plastic injection molds for molding support clamps and the like.

One of the prime objects of the invention is to design a high production injection mold of simple, practical and inexpensive design which can be readly manufactured, which has low maintenance cost, and is also easy and quick to assemble and disassemble.

A further object is to design a gang injection mold for molding separable support clamps which can be made up in any desired length to suit production requirements.

Another object is to design an injection mold from which the molded product can be readily removed and which will be free of sharp edges and corners which might unduly wear the cord of other material supported thereby.

A further object is to provide means in the mold for forming roughened areas on the support for holding the free end in alignment to facilitate insertion of bolts or other connecting means.

With the above and other objects in view the present invention consists in the combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings and more particularly pointed out in the appended claims, it being understood that changes may be made in the form, size, proportion and minor details of construction without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:

Fig. 1 is an isometric view showing the mold assembled.

Fig. 2 is a transverse sectional view of the assembled mold.

Fig. 3 is an isometric view of the core insert.

Fig. 4 is a perspective view showing the opposite side of the core insert.

Fig. 5 is a perspective view of one of the cavity block sections.

Fig. 6 is a perspective view of the companion cavity block section.

Fig. 7 is a perspective view showing a gang of the molded supports.

Referring now more particularly to the drawings in which I have shown the preferred embodiment of my invention, the numerals **10** and **11**, the cavity block sections split on the line **12**, and formed with an open cavity **13** adapted to accommodate the core insert **14**, the block sections being secured in accurate assembled relation by means of guide pins **15** set in the block section **10** and accommodated in registering openings **16** provided in the block **11**. These individual block sections are secured to the opposed jaws of a conventional molding machine (not shown) in the usual manner. The block section **10** is shouldered or recessed as at **17**, the lower end of said recessed section being curved as **18** to snugly accommodate the cylindrical shaped lower end **19** of the insert core **14**.



Guide pins **20** are provided in the face of the recessed face **17** and register with openings **21** formed in the face **22** of the core **14** and a plurality of pads **23** are provided on the face **17**, in spaced relation, and bear against the face **22** of the core insert, these pads forming the openings **24** in the support S, and in a manner to be presently described.

The inner face of the opposite section **11** is also recessed as at **25**, thence merging into an inclined section **26** which in turn terminates in a semi-circular groove **27**, and cut-outs **28** are provided in the lower lip of the surface **26** as shown.

The core insert **14** is interposed between the sections **10** and **11** and the side walls of said core are shaped to lie in facial contact with the faces **17**, **18**, **26** and **27** of the cavity blocks above described with the exception of the recessed portions **30** shown in Figs. 3 and 4. A sprue opening **31** leads into the upper end of the core **14** and into a horizontally disposed passage **32** provided therein and gates **33** open into the recessed passages **30**, said passages lead around the cylindrical section **19**, thence extending upwardly a predetermined distance and having a raised pad section **35** disposed therein, these recessed portions being the shape and depth of the support S which is molded therein.

When the mold is assembled and in closed position as indicated in Fig. 1 of the drawing, the plastic material (not shown), in liquid form, enters the mold through sprue opening **31**, thence flowing in horizontal passage **32**, thence through gates **33** into the cored passages **30** of the core. These cored sections are the exact shape of the supports and when the mold is filled the pads **23** and **35** form openings in said supports.

Roughened areas **36** and **37** are provided in the recessed areas **30** as shown, and these areas serve to form interlocking ribs or projections, which when forced into facial contact prevent lateral slippage of the upturned leg S′ of the support on the main body S so that the bolt holes in the support can be held in alignment and small bolts and other fastening means (not shown), readily inserted.

When the mold is placed in the machine (not shown), one cavity block is secured to one jaw, and the opposite cavity block to the opposite jaw with the core suspended therebetween. In operation these jaws move toward and away from each other. When in closed position, as shown in Fig. 1, the liquid plastic enters the mold, fills passages **29** as above described, and after cooling, the cavity blocks move away from the core. The supports S are then stripped from the core, after which the mold parts again swing back together preparatory to molding another strip of supports.

While a specific embodiment of the invention has been utilized for illustrative purposes, it will be understood that variations therefrom may be made within the terms of the hereinafter appended claims except as said claims by their own terms expressly require otherwise.

What I claim is:

1. A plastic injection mold of the class described comprising a pair of companion cavity blocks releasably secured together and forming a cavity therebetween, a core having a size and shape corresponding to the size and shape of said cavity interposed between said cavity blocks and occupying said cavity, said core having therein a recessed area of the shape and size of an article to be molded, a material opening in said core, a horizontally disposed passage communicating therewith, and a gate connecting said passage and said recessed area, said core and one of said cavity blocks having projecting pads thereon and said core and said one cavity block having

roughened areas adjacent to said pads to form interlocking surfaces on opposite faces of the molded article.

2. A plastic injection gang mold of the character described comprising, a pair of companion cavity blocks releasably secured together and forming a cavity therebetween, a core insert having a size and shape corresponding to the size and shape of said cavity interposed between said blocks and occupying said cavity, said core insert being formed with a plurality of recessed areas each of a size and shape of the articles to be molded, said



core insert having a cylindrical section formed at the lower end of the latter and having an inclined wall leading upwardly from said cylindrical end section, means for feeding plastic material to said recessed areas, and guide pins below said core insert for slidably securing said cavity blocks in aligned relation.

**References Cited** in the file of this patent

UNITED STATES PATENTS

2,499,565 Booth ---------- Mar. 7, 1950